

REMARKS

Rejection of Claims 1, 4 and 5 Under 35 U.S.C. 103(a) Over U.S. Patent 4,562,143 to Hirabayashi et al. (Paragraph 2 of Office Action)

Claims 1, 4 and 5 have been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,562,143 to Hirabayashi et al. for the reasons set forth in paragraphs 2 and 4 of the Office Action. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

Claim 1 has been cancelled and claims 4 and 5 have been amended to be dependent on claim 2.

Accordingly, in view of the cancellation of claim 1, the rejection of Claims 1, 4 and 5 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,562,143 to Hirabayashi et al. for the reasons set forth in paragraphs 2 and 4 of the Office Action is moot.

Rejection of Claims 2-17 Under 35 U.S.C. 103(a) Over U.S. Patent 4,562,143 to Hirabayashi et al. In View of U.S. Patent 5,955,251 to Koyama et al. (Paragraph 3 of Office Action)

Claims 2-17 have been rejected by the Examiner under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 4,562,143 to Hirabayashi et al. in view of U.S. Patent 5,955,251 to Koyama et al. for the reasons set forth in paragraphs 3 and 4 of the Office

Action. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Rejection

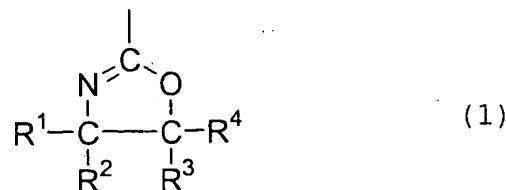
The Examiner's position is that it is obvious to include the oxazoline compound of Hirabayashi et al. at col. 8, lines 20-25 in a photothermographic material. Further, a compound having a 2-oxazolyl group is said to be taught in col. 2 (formula) A of Koyama. The Examiner concludes that it would be obvious to include the compound taught in Koyama in the material of Hirabayashi due to the disclosure in col. 10, lines 13-30 of Koyama.

The Examiner further alleges the following:

1. That the alleged newly discovered property is inherent and thus obvious.
2. That the use of an antifoggant is to prevent the increase in fog, and therefore, the antifoggant prevents the increase of Dmin.
3. That a showing of Dmin alone is not sufficient since the image contrast depends on both Dmax and Dmin.

The Present Invention

Claim 2 relates to a photothermographic material comprising a support having provided on at least one side thereof a photosensitive silver halide, a photo-insensitive organic silver salt, a reducing agent for silver ion and a binder, wherein at least one layer constituting said photothermographic material comprises an oxazoline compound, wherein said oxazoline compound is a compound having two or more 2-oxazolyl groups represented by the following formula (1) in the molecule,



wherein R^1 , R^2 , R^3 and R^4 each independently represents a hydrogen atom, a halogen atom, an alkyl group or an aryl group, wherein R^1 , R^2 , R^3 and R^4 each does not independently represent a hydrogen atom at the same time, and the alkyl group or the aryl group may have a substituent.

The Hirabayashi et al. Patent

The Hirabayashi et al reference discloses heat development of a photosensitive material comprising a support having provided thereon a heat development photosensitive layer containing photosensitive silver halide, organic silver salt, reducing agent and binder. Column 8, lines 11-25 further discloses that an anti-foggant may be used. One type of anti-foggant among the numerous antifoggants disclosed in the Hirabayashi et al. reference that may be used is an oxazoline. There is no disclosure of improving storage stability in the Hirabayashi et al. reference.

The Koyama et al Reference

Col. 10, lines 13-30 of the Koyama et al reference suggests the use of an oxazoline compound in a thermal sensitive image forming material. This oxazoline compound is present in a subbing layer on the information recording material, since the purpose of this layer is to improve adhesion.

Law of Inherency

To support a rejection based upon inherency, an Examiner must provide factual and technical grounds establishing that the inherent feature *necessarily* flows from the teachings of the prior art. See *Ex parte Levy* 17 USPQ2d 1461 (BOPAI 1990); see also *In re Oelrich*, 212 USPQ 323 (CCPA 1981) holding that inherency *must* flow as a necessary conclusion from the prior art, not simply a possible one.

The Federal Circuit stated in *In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999), that "to establish inherency, extrinsic evidence must make clear that the missing descriptive matter was necessarily present in the thing described in the reference, and would be so recognized by persons with ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a set of circumstances is not sufficient." *In re Robertson*, 49 USPQ2d 1949 (Fed. Cir. 1999). Further, it has been held that the mere fact that a certain thing may result from a given set of circumstances is not sufficient, and occasional results are not inherent. MEHL/Biophile International v. Milgram, 52 USPQ2d 1303 (Fed. Cir. 1999).

That which is inherent in the prior art, if not known at the time of the invention, cannot form a proper basis for rejecting the claimed invention as obvious under § 103. See *In re Shetty*, 566 F.2d 81, 86, 195 U.S.P.Q. 753, 756-57 (C.C.P.A. 1977).

Shetty claimed a composition of certain adamantine compounds and a method of using them to curb appetite in animals. The prior art taught structurally similar compounds for use as antiviral agents, with recommended dosages that corresponded to those claimed by appellant. Agreeing with the PTO that the prior art established a *prima facie* case of obviousness as to the composition, which Shetty did not rebut with any evidence of nonobviousness, the CCPA affirmed the rejection of the composition.

But the court did not affirm the PTO position of unpatentability regarding the method claims. Relying on prior art that taught antiviral activity rather than appetite curbing activity, the PTO argued that administering the prior art compound in a dosage described in the art for antiviral effectiveness, which corresponded to appellant's appetite curbing amount, would inherently achieve appetite curbing and thus render the claimed method obvious. Refusing to accept this position, the court responded that although Shetty's dosage "effective to curb appetite" corresponds to or inheres in [the prior art's] amount to 'combat microbial infestation' [, it] does not persuade us of the obviousness of appellant's method." Id. At 86, 195 U.S.P.Q. at 756. Before Shetty had discovered an appetite curbing effect for the claimed adamantane compounds, nothing in the art suggested using the structurally similar prior art adamantanes to curb appetite,

much less the claimed dosage amount. Quoting from *In re Spormann*, 363 F.2d 444, 448, 150 U.S.P.Q. 449, 452 (C.C.P.A. 1966), the court stated:

[T]he inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.

In re Shetty, 566 F.2d at 86, 195 U.S.P.Q. at 757. See also *In re Naylor*, 369 F.2d 765, 768, 152 U.S.P.Q. 106, 108 (C.C.P.A. 1966) ("[Inherency] is quite immaterial if. . . one of ordinary skill in the art would not appreciate or recognize the inherent result."); *In re Rijckaert*, 9 F.3d 1531, 1533, 28 U.S.P.Q.2d 1955, 1957 (Fed. Cir. 1993) (non chemical case).

In *In re Spormann*, the invention related to a process of producing alkali metal sulfites from alkali metal hydroxides and/or carbonates by spraying the latter, in aqueous solution, into a dry gas containing sulfur dioxide. The temperature and humidity of the gas were set to vaporize the water immediately without producing much sulfate. The chemical reaction in the invention was old, but the conducting of the chemical reaction by spraying an alkali metal compound into the gas stream to cause all the water present to be vaporized immediately was not specifically shown in the prior art. The claimed invention was rejected as being obvious in view of the reference Frederich et al. and other secondary references.

Frederich et al. taught a process for making sodium sulfites where a raw material such as sodium hydroxide or sodium carbonate was passed in a solid, powdered form. The solid material carried a specific amount of water throughout the entire process.

On appeal, the CCPA held that none of the cited references suggested the reduction of sulfate when the reactant gas contained large amounts of oxygen. In addition the CCPA stated that

the board apparently thought that the minimizing of sulfate production would be inherent in the process of Frederich et al.... As we pointed out in *In re Adams...*, the inherency of an advantage and its obviousness are entirely different questions. That which may be inherent is not necessarily known. Obviousness cannot be predicated on what is unknown.

Based on this reasoning, the CCPA reversed the obviousness rejection.

Spormann teaches that arguments based on inherent properties cannot stand when there is no supporting teaching in the prior art. Inherency and obviousness are distinct concepts. Thus, an applicant may in certain circumstances attack an obviousness rejection as improper if the Examiner indicates that specific features of the application, although not shown in the prior art, are inherent.

Since there is no evidence that the prior art teaches a marked suppression in the increase in fog due to dark storage after processing, then Applicants respectfully submit that the rejection is not tenable. As such, Applicants respectfully request that the rejection be withdrawn because the Examiner has no basis for alleging that the claimed use is inherent in the prior art.

Advantage of the Present Invention

The Examiner's attention is directed to the "Field of the Invention" on page 1, lines 2-4 of the specification, which recites:

"The present invention relates to photothermographic materials, and specifically those having an improved storage stability after heat development."

Similarly, the last paragraph of Example 1 on page 108 of the specification recites:

As is evident from Table 3, each of samples 102 to 109 prepared according to the invention exhibits marked suppression in the fog increase to be caused by dark storage after processing.

The last four lines on page 109 (e.g. See Example 3) of the specification recites:

As in Example 1, each of samples 201 to 209 prepared according to the invention exhibits marked suppression in the fog increase to be caused by dark storage after processing compared to samples 201' to 209'.

The last paragraph of Example 3 on page 111 of the specification recites:

As is evident from Table 5, even in the cases where an oxazoline compound is used in the interlayer located contiguous to the organic silver salt-containing layer, the fog increase caused by dark storage is markedly suppressed.

The last paragraph of Example 4 on page 113 of the specification recites:

As is evident from Table 6, even in the cases where an oxazoline compound is used in the interlayer located contiguous to the organic silver salt-containing layer, the fog increase caused by dark storage is markedly suppressed regardless of the type of reducing agent combined.

Accordingly, the present invention seeks improved storage stability after heat development in photothermographic materials.

The Examiner's Comments Regarding Dmax/Dmin and Contrast

The Examiner states that a showing of Dmin alone is not sufficient since the image contrast depends on both Dmax and Dmin. However, Applicants are not basing an unexpected improvement in storage stability after heat development in photothermographic materials upon an unexpectedly improved image contrast. Rather, Applicants have addressed the problem of the increase in fog caused by dark storage after heat development in photothermographic materials. Applicants have unexpectedly reduced this increase in fog. Applicants do not present unexpected results with respect to image contrast since this is not the problem being addressed.

Distinctions Between the Prior Art and The Present Invention

Applicants respectfully submit that the Examiner has not established a *prima facie* case of obvious for the reasons set forth above. However, assuming that the Examiner has established a *prima facie* case of obviousness (a point not conceded by Applicants), Applicants have demonstrated unexpected results in order to rebut any *prima facie* case of obviousness.

More specifically, Applicants found that improved storage stability (ΔD_{min}) is achieved by the addition of an oxazoline compound as recited in the present invention. In the Declaration evidence of record, Sample no. 3 and 5 correspond to the present

invention. Applicants will submit a new Declaration showing that samples containing compounds A and C are actually comparison samples. Clearly, inventive sample 3 having a ΔD_{min} of 0.23 and inventive sample 5 having a ΔD_{min} of 0.21 are unexpectedly improved as compared to each of the comparison samples.

Sample No.	Oxazoline Compound	Coated Amount (g/m ²)	D _{min}	$\Delta\Delta D_{min}$	Remarks
1	-		0.17	0.36	Comparison
2	A	1.0	0.16	0.30	Comparison
3	B	1.0	0.16	0.23	Invention
4	C	1.0	0.18	0.29	Comparison
5	D	1.0	0.18	0.21	Invention

Accordingly, the present invention is unexpectedly superior to what is expected in the art. Thus, the prior art rejections should be withdrawn by the Examiner.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicant(s) respectfully petition(s) for a two month extension of time for filing a reply in connection with the present application, and the required fee of \$420.00 is attached hereto.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 

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MSW/sh
0649-0804P

Group 1752

PATENT
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Itsuo FUJIWARA et al. Conf.: 5333
APPL. NO.: 09/960,328 Group: 1752
Filed: September 24, 2001 Examiner: Chea
For: PHOTOTHERMOGRAPHIC MATERIAL

DECLARATION UNDER 37 C.F.R. 1.132

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

I, Yasuhiro YOSHIOKA, state as follows:

1. I am an inventor of the subject matter of the above-identified application.

2. I graduated from Tokyo University with a Master's Degree in Chemistry from the Faculty of Science in 1980. I have been employed with Fuji Photo Film Co., Ltd. since April of 1980 and I am involved in research relating to black and white photothermographic material at the Ashigara Research Laboratories of Fuji Photo Film Co.

In order to demonstrate the unexpected effect asserted in the response to the prior Office Action (i.e., the remarkable effect obtained by using the oxazoline compound) filed November

13, 2002, I have conducted the following experiments under my supervision and control.

I initially wanted to assert the effect obtained by using the claimed oxazoline compound as compared to the use of mercuric acetate as described in the working example of Hirabayashi. However, the Examiner should readily understand that I cannot currently conduct any experimentation using a mercury compound. Thus, I have tested the effect of the present invention with a sample without an oxazoline compound, another sample with an oxazoline compound within the scope of claim 1 and another sample with an oxazoline compound within the scope of claim 2.

The cited reference (Hirabayashi) is not equivalent to and does not suggest the present invention. Even if the description of Koyama (which is different in its technical field and in the effect of the oxazoline compound) is taken into consideration, the teachings thereof cannot be expected to improve the image storage storability by using an oxazoline compound in photothermographic materials.

The same procedure as in sample 101 of Example 1 of the present application (which is herein incorporated by reference) was performed except that the dispersion was prepared and added in

the manner described below in order to prepare each of samples 1 to 5. The same evaluations as in Example 1 were conducted for the samples.

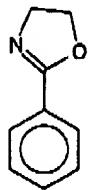
Dispersion A

A slurry was prepared by adding and thoroughly mixing 35 g of water with 20 g of Compound A of the present invention, 40 g of 10% by weight aqueous solution of modified poly(vinyl alcohol) (Poval MP203 of Kuraray Co., Ltd.), and 5 g of 20% by weight aqueous solution of sodium triisopropylnaphthalenesulfonate. In a vessel of a 1/16 gallon sand grinder mill, the slurry was charged together with 240 g of zirconia beads having an average diameter of 0.5 mm, and dispersed at 1500 rpm for 15 hours. The beads were separated with a mesh, the dispersion was filtered through a filter with a pore size of 3 μm . 20 % Dispersion A was obtained.

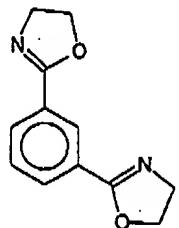
Compound B, C or D shown below was dispersed in the same manner as above to obtain Dispersion B, C or D, respectively.

The thus obtained results are shown in the following table.

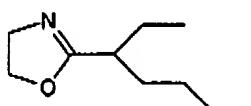
Sample No.	Oxazoline Compound	Coated Amount (g/m ²)	Dmin	ΔDmin	Remarks
1	-		0.17	0.36	Comparison
2	A	1.0	0.16	0.30	Comparison
3	B	1.0	0.16	0.23	Invention
4	C	1.0	0.18	0.29	Comparison
5	D	1.0	0.18	0.21	Invention



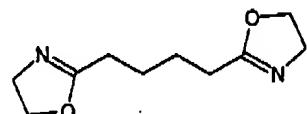
A



B



C



D

Accordingly, the present invention is unexpectedly superior to what is expected in the art.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that

Application No. 09/960,328

such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date

Signature

Yasuhiro YOSHIOKA

Title